LUXMAN R-1040

MODEL

SERVICE MANUAL

CIRCUIT DESCRIPTION

[POWER SUPPLY]

The AC line is connected to the primary side of power transformer via a two pole power switch (front panel) and a voltage selector. Four windings are provided for the secondary side i.e. (1) 12 volt AC for the dial lamps. (2) 15 volts AC for tuner section: This 15V AC is falf-wave rectified by D104 to obtain 18V unsmooth DC, which is further regulated by transistor Q110 and zener diode D102 to realize 13V regulated DC against $\pm$20% AC line fluctuation. (3) 35 volt AC for preamp (equalizer stage, intermediate stage and tone control): The 35V AC is falf-wave rectified by D204 to obtain -45V unsmooth DC, which is turned into low noise -40V via ripple filter Q209. Actual supply voltage at each section is; equalizer stage -37V, tone control -23V, intermediate stage -23V, all of which are determined by the voltage-drop at the de-coupling circuit placed in each stage. (4) 30 volt x 2 AC for main amp: The 30V x 2 AC are rectified by D001 - D004 and then led to large filtering capacitors C001 and C002 (10000uF x 2) to obtain dual supply +35V and -35V. (5) 21 volt x 2 AC for Peak Indicator, which are tapped out from the same winding of the above (4). The 21V x 2 AC are rectified by D603 - D606 to obtain dual supply +27V and -27V.

[PRE AMP SECTION]

The pre-amplifier consists of an equalizer, and intermediate amplifier, and a tone control. The equalizer adopts the Negative Feedback circuit using two silicon transistors, 2SA836 (Q101), 2SC1345 (Q102) per channel and is designed to provide proper equalization to the input signals. Input signals given through the AUX and TUNER section bypass the equalizer and are fed directly to the later stages of this receiver.

Controls arranged after the equalizer stage are: REC. OUT connector, TAPE MONITOR SIWTCH, LOW-CUT FILTER, HIGH-CUT FILTER, MODE SELECTOR, VOLUME CONTROL, and LOUDNESS SWITCH. The intermediate amplifier consisting of Q301 and Q302 is a flat amplifier adopting 2-stage Negative Feedback circuit which is designed to boost the equalizer, tuner or AUX. This covers sufficiently the insertion loss by the tone control in the next stage and leads low impedance output to the tone control for its smooth function. The tone control adopts the EB-NF-circuit of Q201 & Q202. Any desired frequency response can be adjusted by the following controls: Variable resistor VR202 (Bass), and variable resistor VR201 (Treble). Major components of the pre-amplifier are arranged on the printed circuit boards PB1059 - 1061, 1064. (PB1064 for Equalizer, PB1059 for Filters, Loudness and Mode, PB1060 for Flat Amp, and PB1061 for Tone Control)

[MAIN AMPLIFIER]

The main amplifier is of full stage direct coupling, one stage differential amplification, predriving and fully complementary circuits. The power transistors Q207 2SC1030 (NPN) and Q309 2SA756 (PNP) (2-transistor per channel) are fitted over to the heat sink inside the chassis. All components are assembled to the printed circuit board PB1009. The differential amplifier is consisted of Q201 and Q202, the pre-driving stage of Q203, and the driver transistors, Q205 and Q206. Besides the above transistors, capacitors, resistors, and semi-fixed potentiometers are integrated in the circuit.

[AM SECTION]

The RF signal received by the ferrite-rod antenna is converted into 455KHz IF frequency by Q113. The output of the local oscillation circuitry composed of Q113 and T105 is mixed

in Q113 with the incoming radio signal to provide the 455kHz IF frequency, which is connected to the next stage.

Only the desired signal is selected by T104, a ceramic filter of sharp characteristic. The selected signal is then amplified by the 455kHz IF amplifier composed of Q112 and Q111 and is detected by D106.

For a strong signal, a strong AGC action can be applied by lowering the base potential of Q112, when the collecter potential of Q112 increases, and D110 and D111 are being released, which by-passes the signal level given to the base of Q112. Normally these D110 and D111 are of reverse-bias each other, therefore no signal is by-passed. D108 is arranged as a noise cancel circuit. The potential at the TP2 point is sharply reduced to a negative voltage when pulse noise comes in, when D108 is released to provide potential to the TP2 point from C158. Thus noise level is reduced.

[FM SECTION]

The FM section has been designed to realize superior characteristics for various spurious responses, or image ratio etc., by integrating in a 3-gang tuning capacitor the tuning circuitry with a matching transformer for 75-ohm and 300-ohm, a FET RF amplifier with an excellent noise figure, stable frequency converter. Further the whole section is housed in an excellent shield cover.

[IF AMPLIFIER]

The signal, converted to 10.7MHz IF frequency at the Frontend, is connected to F101 ceramic filter to remove interfering signals, then amplified up to a certain level by Q101. The output is connected to F102 ceramic filter, where any further interfering signals are removed to obtain the necessary selectivity. F101 and F102 are of the linear-phase type, therefore less distortion in stereophonic reception is realized. Then the signal is supplied to Q102 the quadrature IC, which has a 3-gang IF amplifier and incorporates these circuits of FM detection, muting and signal strength.

But at the time of AM reception, noises are possible from this IC, therefore in this occasion this IC is designed not to operate by applying some voltage to PIN No 2. The quadrature detection system is adopted for the FM detection circuitry, which operates in combination with the external circuitry of T101, T301 and L102.

At Pin No 12, output of the muting circuitry, the voltage will be 0V when signals are available, while approximately 4V will appear at no-signal time. By feeding the voltage to Pin No 5, the muting circuitry can be operated. The detection output is available at the Pin No 6, where usually an output of about 350mV appears, which is supplied to Q105, the P.L.L. IC is used for the multiplex to obtain stereo reception. The 76kHz voltage control oscillator is incorporated in the P.L.L. IC, where the 76kHz signal is divided by 2 to make 38kHz for switching of the composite signal. The oscillation frequency is controlled to perfectly match with that of the 19kHz pilot signal of the composite signal, therefore deterioration of the separation etc. caused by the change of ambient conditions is eliminated. For the weak signal, the Pin No 10 is grounded by supplying the muting signal to the base of Q104 to set up monaural signal. The VCO output of 19kHz is available at Pin No 12 of this IC (TP-1), which is controlled by VR103. The separation adjustment is easily done with VR102 by canceling the leak-signals of L- and R-ch. The spurious by VCO will be the interfering signal at the time of AM reception, therefore the oscillator is cancelled by supplying some voltage to Pin No 16.

The discriminated signals appear at Pin No 4 and Pin No 5 which is then connected to the audio amplifier via low-pass filter and de-emphasis circuit. Selection of 75 usec and 50 usec is possible by this switch. The final output of approximately 1V r.m.s. (400Hz, 100% modulation), is obtained with low output impedance from the audio amplifier composed of Q106 - Q109.

[PEAK INDICATOR CIRCUIT](PB-1063)

The output signal passed through the "Peak Indicator Sensitivity Selector Switch" meets the Peak Detection circuit composed of Q601, Q602, D602 and C602, whose detected DC signal is then converted into low-impedance by current booster Q503 and Q504.

Of course different threshold level is arranged for each LED driver Q605 - Q610 to make them light up in accordance with the signal level.

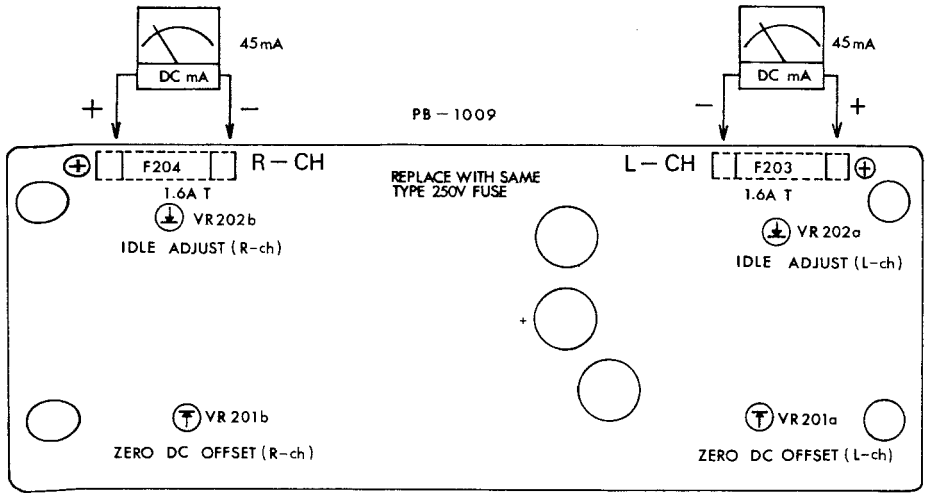
[A.F.C.C. -----Automatic Filter Control Circuit] (PB-1059)

At the time of AM reception, if the higher order harmonics caused by cliping of power amp are fed back to the AM antenna, the operation will be unstable. Therefore the harmonics passed through the high pass filter Q601 are detected by D501, which controls the electronic high frequency attenuator Q502 and C508 connected to the output of AM detector. Thus unstable factors such as oscillation are eliminated.

STEP	SIGNAL SOURCE CONNECTED TO	SET SIGNAL TO	SET RADIO DIAL TO	OUTPUT INDICATOR CONNECTED TO	ADJUST	ADJUST for
1	Set selector switch to "AM" and the mains power switch to "OFF".					
2	Press Power switch for "ON".					
3				DCVTVM PB1001B point 19	check	13 - 14 DCVTVM reading
4	Output of sweep generator to PB1001B 36 and ground	±40KHz sweep cnetred at 455KHz generator output level 40dB - 50dB	Quiet point on band near 1600KHz	Oscilloscope PB1001B terminal TP-2	T104 core	Maximum symmetrical response.
5	Standard radiating loop antenna placed near AM built-in antenna	600KHz at 400Hz, 30% modulation Field strength 50dB/m -80dB/m	600KHz	Oscilloscope ACVTVM output terminal	T105 core	Dial pointer to be tuned at 600KHz.
6					Bar antenna coil L401	Maximum ACVTVM reading - Slide coil bobbin
7		1400KHz at 400Hz, 30% modulation Field strength 50dB/m - 80dB/m	1400KHz		TC305	Dial pointer to be tuned at 1400KHz
8					TC304	Maximum ACVTVM reading
9	Repeat steps 5 - 8 as necessary to obtain maximum sensitivity and exact tuning point on dial scale.					
10	Fix by adhesive agent the core and bobbin aligned at step 5.					
11	Standard radiating loop antenna placed near AM built-in antenna	1000KHz at 400Hz, 30% modulation Field strength 126dB/m	1000KHz		VR104	Set pointer of signal strength meter to the right hand dot mark.
12		600KHz at 400Hz, 30% modulation	600KHz	Oscilloscope ACVTVM Distortion Meter output terminal		IHF maximum usable sensitivity which is equivalent electric field strength at the loopstick antenna adjusted by at attenuator of AMSG so that noise and distortion can be -20dB of total output.
13		1400KHz at 400Hz, 30% modulation	1400KHz			
14	Set the function at the "FM Auto" position and the muting switch at "OFF".					
15	Connect 20 and 21 on PB1001B.					
16	First, set the VR101 at counter-clockwise position.					

STEP	Signal Source Connected to	Set Signal to	Set Radio Dial to	Output Indicator Connected to	Adjust	Adjust for
17	FM signal generator Across FM antenna terminals (300-ohm) through matching network.	Reduce the output level to zero. (interstation receiving condition)	Quiet point on band near 98MHz		T301	Center indication of the tuning meter.
18		98MHz at 400Hz, 100% modulation Output level 1mV	Correct reception of 98MHz signals of FMSG at the center of tuning meter	Oscilloscope Distortion Meter ACVTVM output terminals	T101	Minimum distortion.
19	Repeat steps 17, 18 so as to get distortion of less than 0.1 - 0.2%.					
20	FM signal generator Across FM antenna terminals through 300-ohm matching network	108MHz at 400Hz, 100% modulation, generator output level 1.5 - 2uV	108MHz	Oscilloscope Distortion Meter ACVTVM output terminals	TC301 TC302	Maximum output level (Hands Off ; TC303)
21		98MHz at 400Hz, 100% modulation, generator output level 1.5 - 2uV	98MHz		L305	Maximum output level
22	Put the muting switch to "ON".					
23	FM signal generator Across FM antenna terminals through 300-ohm matching network.	98MHz at 400Hz, 100% modulation generator output level 2.2uV	98MHz	Oscilloscope ACVTVM output terminals	VR101	Fix VR101 at the point where output audio drops by 1dB.
24	Repeat steps 17, 18 and check that it gets distortion of less than 0.1 - 0.2%.					
25	Remove wiring made at step 15.					
26	FM signal generator Across AM antenna terminals through 300-ohm matching network.	98MHz no modulation generator output level 1mV	98MHz	Frequency Counter PB1001B, TP-1	VR103	Adjust the frequency of P.L.L. VCO at 19KHz.
27		98MHz at 19KHz, 10% (Lch) 400Hz 90% 98MHz at	98MHz	15KHz L.P.F. ACVTVM output terminal	VR102	Rch output level to minimum. Lch output level to minimum.

IDLE ADJUST & ZERO DC OFFSET



1. Idle Adjust

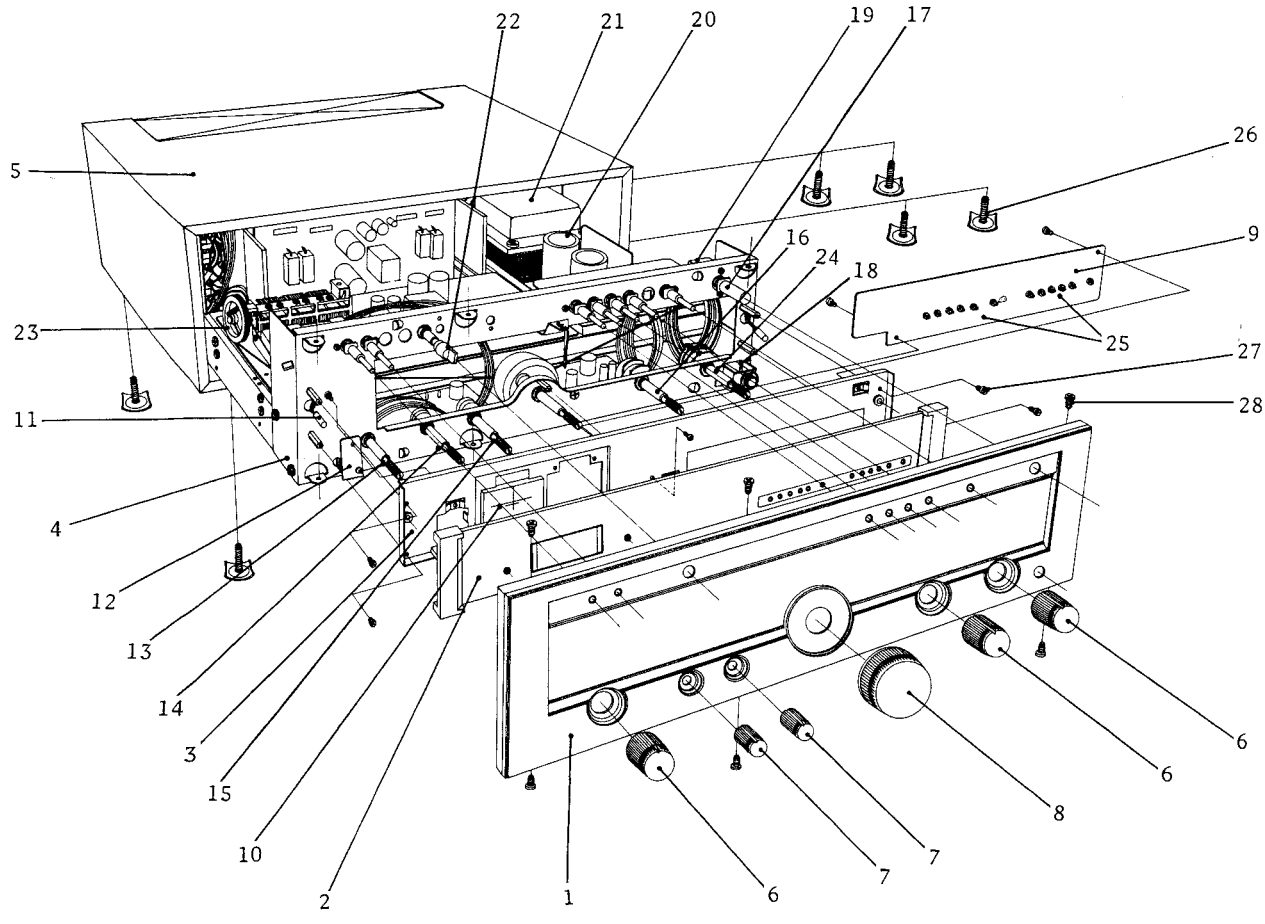
VR202a (L-ch) and VR202b (R-ch) on PB1009 are semifixed potentiometer for quiescent current adjustment of the power transistors.

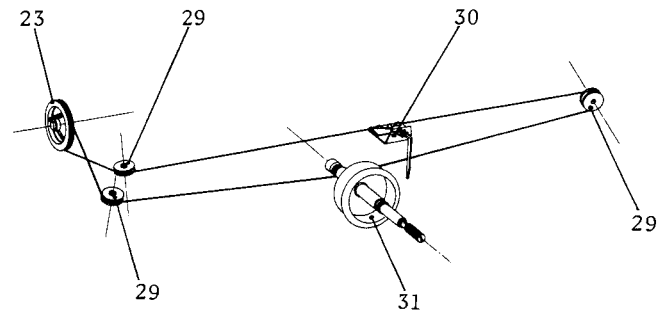
First, remove both fuses of F203 (L-ch) and F204 (R-ch), and then insert a DC ammeter between the fuse grips. (⊕ for the edge-side grip)

After one minute of POWER-ON, adjust VR202a and VR202b respectively to have 45mA reading on the meter.

2. Zero DC Offset

VR201a (L-ch) and VR201b (R-ch) on PB1009 are semifixed potentiometers for the Zero DC Offset adjustment of the power amplifier section. Connect a DC milivolt meter to the speaker terminals and adjust VR201a and VR201b respectively. The DC offset voltage should be within $\pm$50mV.





1.	WA1069	Front Panel
2.	WM1025	Dial Scale Ass'y
3.	UQ1013	Holder
4.	UB1024	Sub Panel
5.	WB1043	Wooden Case
6.	WH1033	Knob (function etc.)
7.	WH1034	Knob (tone cont.)
8.	WH1035	Knob (tuning)
9.	PC1063	PB-1063
10.	AM0039	AM/FM Tuning Meter
11.	AL0039	Dial Lamp
12.	TD0088	L.E.D. SLP-119B
13.	SR0084	Rotary Sw. (selector)
14.	RV0100	VR (100k-B x 2, BASS)
15.	RV0101	VR (50k-B x 2, TREBLE)
16.	RV0102	VR (200k-B x 2, MAIN VR CONT.)
17.	WJ1066	Knob (power)
18.	AJ0015	Headphone Jack
19.	SP0070	Power Sw.
20.	CE0031	Electrolytic 10000uF 50V x 2
21.	PT0120	Power Transformer
22.	WJ1067	Mould Knob (Balance)
23.	BX0016	Drum (tuning capacitor)
24.	SR0083	Rotary Sw. (speaker)
25.	TD0088	L.E.D. SLP-119B
26.		Screws 4mm x 20mm
27.		Screws 3mm x 6mm
28.		Screws 4mm x 10mm
29.	BX0022	Plastic Pulley
30.	UZ1090	Tuning Pointer
31.	UX1003	Flywheel

REPLACEMENT PARTS LIST

Resistors; 1/4W, ±5% unless otherwise noted.
L ..... low noise type

Capacitors; P...polyester film, S...polystyrol, E...electrolytic, T...tantalum
C...ceramic, M...mylar
LR.....low leakage type, LL.....semi low leakage type

PB-1001

SYMBOL NO.	STOCK NO.	DESCRIPTION
R101	RD0052	220
102	0050	330
103	0034	5.6k
104	0050	330
105	0046	680
106	0056	100
107	0024	33k
108	0024	33k
109	0046	680
110	0050	330
111	0035	4.7k
112	0065	22
113	0029	12k
114	0053	180
115	0030	10k
116	0028	15k
117	0491	2k
119	0039	2.2k
120	0022	47k
121	0022	47k
122	0029	12k
123	0028	15k
124	0035	4.7k
125	0056	100
126	0043	1k
127	0022	47k
128	0020	68k
129	0037	3.3k
130	0037	3.3k
131	0046	680
132	0056	100
133	0041	1.5k
134	0037	3.3k
135	0037	3.3
136	0024	33k
137	0024	33k
138	0022	47k
139	0009	470k
140	0043	1k
141	0050	330
142	0009	470k
143	0013	220k
144	0029	12k
145	0034	5.6k

SYMBOL NO.	STOCK NO.	DESCRIPTION
R146	RD0024	33k
147	0013	220k
148	0050	330
149	0034	5.6k
150	0024	47k
151	0024	33k
152	0048	470
153	0051	270
154	0051	270
155	0043	1k
156	0056	100
158	0034	5.6k
159	0009	470k
160	0052	220
161	0034	5.6k
162	0042	1.2k
163	0030	10k
164	0011	330k
165	0052	220
166	0036	3.9k
167	0029	12k
168	0028	15k
169	0037	3.3k
170	0043	1k
171	0043	1k
172	0030	10k
173	0050	330
174	0037	3.3k
175	0043	1k
176	0061	47
177	0069	10
178	0038	2.7k
179	0069	10
180	0032	8.2k
181	0024	33k
182	0061	47
301	0022	47k
302	0024	33k
303	0026	22k
304	0034	5.6k

SYMBOL NO.	STOCK NO.	DESCRIPTION
C101	CK0010	0.04uF C
102	CK0010	0.04uF C
103	CE0099	2.2uF 50V E
104	0087	220uF 25V E
105	CK0010	0.04uF C
106	0010	0.04uF C
107	0010	0.04uF C

SYMBOL NO.	STOCK NO.	DESCRIPTION
C108	CE0099	2.2uF 50V E
109	CE0213	0.47uF 50V E
110	CK0010	0.04uF C
111	0010	0.04uF C
112	0063	0.02uF C
113	0010	0.04uF C
114	CE0099	2.2uF 50V E

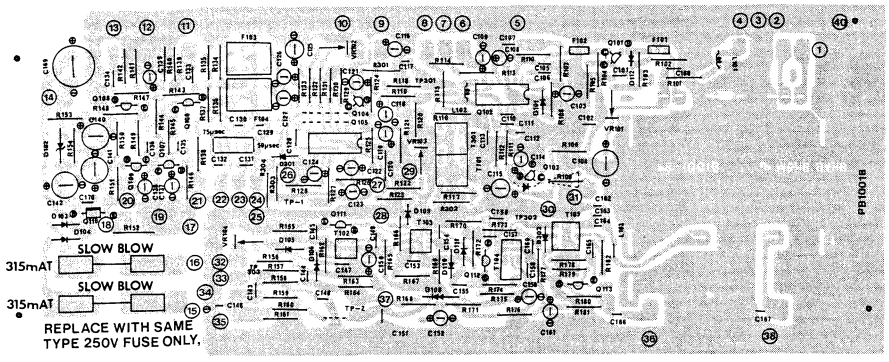
PB-1001

SYMBOL NO.	STOCK NO.	DESCRIPTION	SYMBOL NO.	STOCK NO.	DESCRIPTION
C115	CE0077	47uF 16V E	C145	CK0010	0.04uF C
116	CE0098	1uF 50V E	146	CK0055	4700pF C
117	CC0007	100pF C	147	CK0063	0.02uF C
119	CE0067	33uF 10V E	148	CE0099	2.2uF 50V E
120	CQ0041	1000pF S	149	CK0010	0.04uF C
121	CE0098	1uF 50V E	150	CE0074	10uF 16V E
122	CS0054	0.33uF 35V T	151	CK0010	0.04uF C
123	CE0213	0.47uF 50V E	152	CE0074	10uF 16V E
124	CS0054	0.33uF 35V T	153	CK0010	0.04uF C
125	CE0077	47uF 16V E	154	CK0010	0.04uF C
126	CE0099	2.2uF 50V E	155	CK0010	0.04uF C
127	CE0099	2.2uF 50V E	156	CK0010	0.04uF C
128	CQ0009	0.047uF M	157	CK0010	0.04uF C
129	CQ0202	1600pF S	158	CE0077	47uF 16V E
130	CQ0202	1600pF S	159	CK0010	0.04uF C
131	CQ0100	820pF S	160	CK0010	0.04uF C
132	CQ0100	820pF S	161	CE0074	10uF 16V E
133	CQ0008	0.056uF M	162	CC0080	15pF C
134	CQ0008	0.056uF M	163	CC0004	22pF C
135	CK0019	470pF C	164	CQ0172	330pF S
136	CK0019	470pF C	165	CK0063	0.02uF C
137	CE0084	4.7uF 25V E	166	CK0010	0.04uF C
138	CE0084	4.7uF 25V E	167	CC0033	10pF C
139	CE0067	33uF 10V E	168	CK0010	0.04uF C
140	CE0087	220uF 25V E	169	CE0090	1000uF 25V E
141	CE0087	220uF 25V E	170	CK0011	0.01uF C
142	CE0087	220uF 25V E			
143	CQ0011	0.033uF M			
144	CK0055	4700pF C			

SEMICONDUCTORS

SYMBOL NO.	STOCK NO.	DESCRIPTION	SYMBOL NO.	STOCK NO.	DESCRIPTION
Q101	TR0092	2SC1674	D101	TD0053	1S2473
102	TC0014	HA1137W	102	TD0079	WZ140
103	TR0066	2SC1222	104	TD0002	1N4002
104	TR0092	2SC1674	105	TD0018	1K188FM-1
105	TC0012	LA3350	106	TD0018	1K188FM-1
106	TR0066	2SC1222	108	TV0005	VD1221
107	TR0068	2SA640	109	TD0053	1S2473
108	TR0066	2SC1222	110	TD0018	1K188FM-1
109	TR0068	2SA640	111	TD0018	1K188FM-1
110	TR0047	2SD235	112	TV0006	VD1121
111	TR0092	2SC1674	301	TD0053	1S2473
112	TR0011	2SC372	302	TD0018	1K188FM-1
113	TR0092	2SC1674			

PB-1001



SEMI-FIXED POTENTIOMETERS

SYMBOL NO.	STOCK NO.	DESCRIPTION
VR101	RT0051	5k-B
102	RT0050	500-B
103	RT0051	5k-B
104	RT0052	20k

FILTERS

SYMBOL NO.	STOCK NO.	DESCRIPTION
F101	LA1028	SFE10.7MA
102	LA1028	SFE10.7MA
103	LA1058	LUX-1058
104	LA1058	LUX-1058

COILS & TRANSFORMERS ETC

SYMBOL NO.	STOCK NO.	DESCRIPTION
L101		18uH
102		18uH
103		2.7uH
F004		315mA

SYMBOL NO.	STOCK NO.	DESCRIPTION
T101	LA1093	LA-1093
102	LA1096	LUX-1096
103	LA1096	LUX-1096
104	LA1105	RL17W105Z
105	LA1073	LUX-1073
T301	LA1092	LA-1092

PB-1009

RESISTORS

SYMBOL NO.	STOCK NO.	DESCRIPTION
R201ab	RD0011	330k
202ab	RD0037	3.3k
203ab	RD0024	33k
204ab	RD0043	1k
205ab	RD0034	5.6k
206ab	RD0042	1.2k
207ab	RD0041	1.5k
208ab	RD0024	33k
209ab	RD0009	470k
210ab	RD0040	1.8k
211ab	RD0036	3.9k
212ab	RD0022	47k
213ab	RD0022	47k
214ab	RD0040	1.8k
215ab	RD0047	560

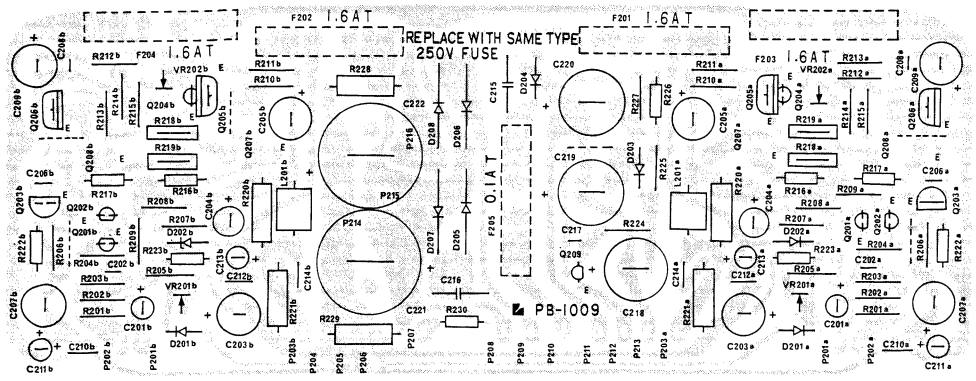
SYMBOL NO.	STOCK NO.	DESCRIPTION
R216ab	RS0074	100 1/2W FP
217ab	RS0074	100 1/2W FP
218ab	RG0009	0.33 3W
219ab	RG0009	0.33 3W
220ab	RS2696	4.7 1W
221ab	RS2708	15 1W
222ab	RS0074	100 1/2W FP
223ab	RS0129	1.5k 1/2W
224	RD0043	1k
225	RD0030	10k
226	RS0074	100 1/2W FP
227	RD0068	12
228	RD0150	4.7k 1W
229	RD0150	4.7k 1W
231ab	RD0043	1k

CAPACITORS

C201ab	CE0173	3.3uF	25V	E,LR
202ab	CK0018	330pF	50V	C
203ab	CE0102	47uF	50V	E
204ab	CE0068	47uF	10V	E
205ab	CE0094	47uF	35V	E
206ab	CC0005	33pF	50V	C
207ab	CE0102	47uF	50V	E
208ab	CK0008	0.04uF	50V	C
210ab	CK0008	0.04uF	50V	C

C211ab	CE0098	1uF	50V	E
212ab	CK0008	0.04uF	50V	C
213ab	CE0098	1uF	50V	E
214ab	CK0028	0.02uF	50V	C
215	CU0012	0.01uF	1.4kV	C
217	CC0007	100pF		C
218	CE0146	220uF	50V	E
219	CE0146	220uF	50V	E
220	CE0146	220uF	50V	E

PB-1009



SEMICONDUCTORS

Q201ab	TR0151	2SA750 (1)DA
202ab	TR0151	2SA750 (1)DA
203ab	TR0123	2SC1951-2
204ab	TR0029	2SC945P
205	TR0121	2SC1626Y
206	TR0122	2SA816Y
207	TR0186	2SC1030B or 2SD371(O)
208	TR0187	2SA756B or 2SB531 (O)

D201ab	TD0027	WZ-120
202ab	TD0002	1N4002
203	TD0002	1N4002
204	TD0003	1N4003

SEMIFIXED POTENTIOMETERS

VR201ab	RT0016	10k-B
202ab	RT0013	330-B

COILS

L201ab		2uH

PB-1056 (FUSE BOARD)

C001 - 004	CU0004	0.01uF 250V P
D001 - 004	TD0106	S3V40
F001 - 005		0.5A

PB-1059 (SWITCH BOARD)

R501ab	RD0004	1M
502ab	RD0033	6.8k
503ab	RD0004	1M
504ab	RD0025	27k
505ab	RD0029	12k
506ab	RD0014	180k
507ab	RD0022	47k
508ab	RD0025	27k

R509	RD0030	10k
510	RD0022	47k
511	RD0022	47k
512	RD0043	1k
513	RD0035	4.7k
514	RD0017	100k
515	RD0030	10k
516	RD0009	470k

PB-1060A (Flat Amp Board)

RESISTORS

SYMBOL NO.	STOCK NO.	DESCRIPTION
R301ab	RD0024	33k
302ab	RD0022	47k
303ab	RD0004	1M
304ab	RD0009	470k
305ab	RD0038	2.7k
306ab	RD0027	18k
307ab	RD0043	1k
308ab	RD0034	5.6k
309	RD0037	3.3k

CAPACITORS

SYMBOL NO.	STOCK NO.	DESCRIPTION
C301ab	CE0173	3.3uF 25V E, LR
302ab	CE0078	100uF 16V E
303ab	CC0012	10pF 50V E, LR
304ab	CE0173	33uF 25V E, LR
305	CK0008	0.04uF 50V C
306	CE0103	100uF 50V E

TRANSISTORS

Q301ab	TR0125	2SA836E
302ab	TR0025	2SC1345E

TRIMMER POT

VR301ab	RV0102	200kB x 2

PB-1061 (Tone Control Board)

RESISTORS

SYMBOL NO.	STOCK NO.	DESCRIPTION
R201ab	RD0041	1.5k
202ab	RD0027	18k
203ab	RD0037	3.3k
204ab	RD0041	1.5k
205ab	RD0027	18k
206ab	RD0037	3.3k
207ab	RD0043	1k
208ab	RD0022	47k
209ab	RD0049	390
210ab	RD0034	5.6k
211ab	RD0015	150k
212ab	RD0013	220k

CAPACITORS

SYMBOL NO.	STOCK NO.	DESCRIPTION
C201ab	CQ0026	1000pF 50V M
202ab	CQ0026	1000pF 50V M
203ab	CQ0011	0.033uF 50V M
204ab	CQ0022	2700pF 50V M
205ab	CE0173	3.3uF 25V E, LR
206ab	CC0037	4.7pF 50V C
207ab	CC0005	33pF 50V C
208ab	CE0173	3.3uF 25V E, LR
209	CK0008	0.04uF 50V C
210	CE0096	220uF 35V E

TRANSISTORS

Q201ab	TR0125	2SA836E
202ab	TR0125	2SA836E

TRIMMER POT

VR201ab	RV0101	50kB x 2
202ab	RV0100	100kB x 2

PB-1063 (Peak Indicator Board)

SYMBOL NO.	STOCK NO.	DESCRIPTION
R601ab	RD0026	22k
602ab	RD0019	82k
603ab	RD0030	10k
604ab	RD0033	6.8k
605ab	RD0027	18k
606ab	RD0045	820
607ab	RD0041	1.5k
608ab	RD0046	680
609ab	RD0040	1.8k
610ab	RD0046	680
611ab	RD0039	2.2k
612ab	RD0046	680

SYMBOL NO.	STOCK NO.	DESCRIPTION
R613ab	RD0037	3.3k
614ab	RD0046	680
615ab	RD0035	4.7k
616ab	RD0046	680
617ab	RD0030	10k
618ab	RD0040	1.8k
619ab	RD0040	1.8k
620ab	RD0040	1.8k
621ab	RD0040	1.8k
622ab	RD0040	1.8k
623ab	RD0040	1.8k

C601ab	CE0171	4.7uF 16V E
602ab	CE0098	1uF 50V E
603	CE0250	100uF 35V E
604	CK0008	0.04uF 50V C

C605	CK0008	0.04uF 50V C
606	CK0008	0.04uF 50V C
607	CK0008	0.04uF 50V C
608	CE0250	100uF 35V E

SEMICONDUCTORS

SYMBOL NO.	STOCK NO.	DESCRIPTION
Q601ab - 603ab	TR0127	2SC733GR
604ab	TR0128	2SA495GR
605ab - 610ab	TR0127	2SC733GR

D601ab	TD0016	1S1555
602ab	TD0016	1S1555
603 - 606	TD0002	1N4002

LED601ab - 606ab	TD0088	SLP-119B

PB-1064 (Equalizer Amp Board)

SYMBOL NO.	STOCK NO.	DESCRIPTION
R401ab	RD0021	56k
402ab	RD0090	470k L
403ab	RD0414	2.2k L
404ab	RD0077	1M L
405	RD0028	15k
406ab	RD0048	470
407ab	RD0413	1.8k L
408	RD0023	39k
409ab	RD0078	820k L

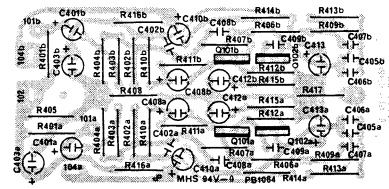
SYMBOL NO.	STOCK NO.	DESCRIPTION
R410ab	RD0172	820 L
411ab	RD0085	47k L
412ab	RD0084	100k L
413ab	RD0086	39k L
414ab	RD0032	8.2k
415ab	RD0042	1.2k
416ab	RD0011	330k
417	RD0046	680

SYMBOL NO.	STOCK NO.	DESCRIPTION		
C401ab	CS0008	2.2uF	25V	T
402ab	CC0005	33pF	50V	C
403ab	CE0078	100uF	16V	E
404ab	CC0008	150pF	50V	C
405ab	CQ0130	1000pF	50V 5%	M
406ab	CQ0130	1000pF	50V 5%	M
407ab	CQ0122	6800pF	50V	M

SYMBOL NO.	STOCK NO.	DESCRIPTION		
C408ab	CE2030	10uF	16V	E,LL
409ab	CC0037	5pF	50V	C
410ab	CS0012	0.47uF	35V	T
411	---	---	---	-
412	CE0068	47uF	10V	E
413ab	CE0102	47uF	50V	E

SYMBOL NO.	STOCK NO.	DESCRIPTION
Q101ab	TR0125	2SA836E
102ab	TR0025	2SC1345E

PB-1064



BACK PANEL

SYMBOL NO.	DESCRIPTION
AC0010	AC Socket MD-40
AG0063	GND Terminal
AS0002	DIN Connector
AT0051	SP Terminal AKA-001-0
AT0053	SP Terminal AKA-111-X
AT0066	8-pin Jack T-5556
BE1030	Heat Sink 1030
BU0045	PCB Holder LCBS-4
RD0015	Resistor 150K ohms
UC1043	Back Panel 1043

CHASSIS

SYMBOL NO.	DESCRIPTION
AC0013	AC Selector Socket
AC0014	AC Selector Plug
AH0016	1p Fuse Holder (AC, AZ)
AH0019	Fuse Holder (AD, AG, AK, AS, AY)
BF0209	Fuse 5x20 1.6A(T) (AD, AS)
BF0303	Fuse MF51NR-3A (AC)
BX0004	Bar Antenna Holder
BX0016	Dial Drum
CE0031	10000uF 50V E
CU0031	AC Capacitor (AD, AG, AK, AS, AY)
CU0051	AC Capacitor (AC, AZ)
LA1057	Bar Antenna LUX-1057
PT0120	Power Transformer
RD0100	Resistor 2.2M 1/2W (AC, AZ)
TD0088	L.E.D. SLP-119B

SUB PANEL

SYMBOL NO.	DESCRIPTION
AJ0015	Headphone Jack
AL0039	Lamp 12V 100mA
AM0039	Tuning Meter
BX0017	Pulley shaft No.5508
BX0022	Pulley No. 7017
CE0077	47uF 16V E
RD0037	Resistor 3.3k ohms
RS0085	Resistor 560 ohms
RV0129	250k-MN (balance)
SP0070	Push Sw. (power)

SP0074	Multi Sw. SUE23 (monitor, FM mute)
SR0084	Rotary Sw. SRY4084104 (function)
TD0088	L.E.D. SLP-119B
UB1024	Sub Panel 1024
UX1003	Fly-wheel 1003
UZ1090	Dial Pointer
WM1025	Dial Scale 1025

EXTERIOR

STOCK NO.	DESCRIPTION
BU0069	LEG No. 7109
WA1069	Front Panel
WB1043	Wooden Case
WH1033	Knob set (speakers etc.)
WH1034	Knob set (tone cont.)
WH1035	Knob set (tuning)
WJ1066	Mould Knob

STOCK NO.	DESCRIPTION
WJ1067	Mould Knob
WJ1069	Mould knob (monitor etc.)
WT1009	Ventilation 1009
WT1020	Ventilation 1020
BK0007	FM antenna
XA1101	Packing Case 1101

SPECIFICATIONS

[AUDIO SECTION]

Power Output:	40 watts minimum continuous per channel both channels driven into 8-ohm loads, at any frequency from 20Hz to 20,000Hz with no more than 0.05% total harmonic distortion.
Total Harmonic Distortion 8-ohm, both ch driven 1 KHz:	No more than 0.03% (at full power)
Rated I.M.:	No more than 0.05% (8-ohm, both ch driven, 60Hz: 7KHz = 4 : 1)
Frequency Response:	10Hz - 50KHz (−1dB)
Input Sensitivity:	2.5mV (phono), 150mV (aux, monitor)
Phono Overload Voltage:	No less than 150mV (1KHz)
S/N Ratio:	Better than 69dB (phono) Better than 89dB (aux., monitor)
Residual Noise:	No more than 0.7mV
Damping Factor:	60 (8-ohm)
Tone Control:	Bass: ±10dB at 100Hz Treble: ±10dB at 10KHz
Filters:	High Cut .... 7KHz (6dB/oct.) Low Cut 70Hz (6dB/oct.)
Crosstalk at 1KHz:	−65dB (aux., monitor)
Peak Indicators:	0, −6, −9, −12, −15, −18dB
Another Features:	Selector switch for peak indicator sensitivity (0dB, −12dB) Tape Monitor, Speaker Selector, etc.

[FM SECTION] (IEEE/IHF Standard)

		[mono]	[stereo]
Usable Sensitivity:		11.2dBf (2μV)	19dBf (4.8μV)
46dB Quieting Sensitivity: 50μS;		18.2dBf (4.5μV)	41dBf (60μV)
50dB Quieting Sensitivity: 75μS;		18.2dBf (4.5μV)	39.8dBf (51μV)
Signal-to-noise Ratio at 65dBf:		74dB	70dB
Muting Threshold:		12.2dBf (2.3μV)	12.2dBf (2.3μV)
Frequency Response 30Hz to 15KHz:		+0.5, −1.5dB	+0.5, −1.5dB
Distortion at 65dBf:	100Hz;	0.2%	0.3%
	1KHz;	0.2%	0.3%
	6KHz;	0.3%	0.5%
Intermodulation Distortion:		0.2%	0.3%
Capture Ratio at 65dBf:		1.2dB	–
Alternate Channel Selectivity:		55dB	–
Spurious Response Ratio:		70dB	–
IF Response Ratio:		70dB	–
Image Response Ratio:		55dB	–
AM Suppression Ratio:		50dB	–
Stereo Separation:	100Hz;	–	45dB
	1KHz;	–	45dB
	10KHz;	–	40dB
SCA Rejection Ratio:		–	60dB

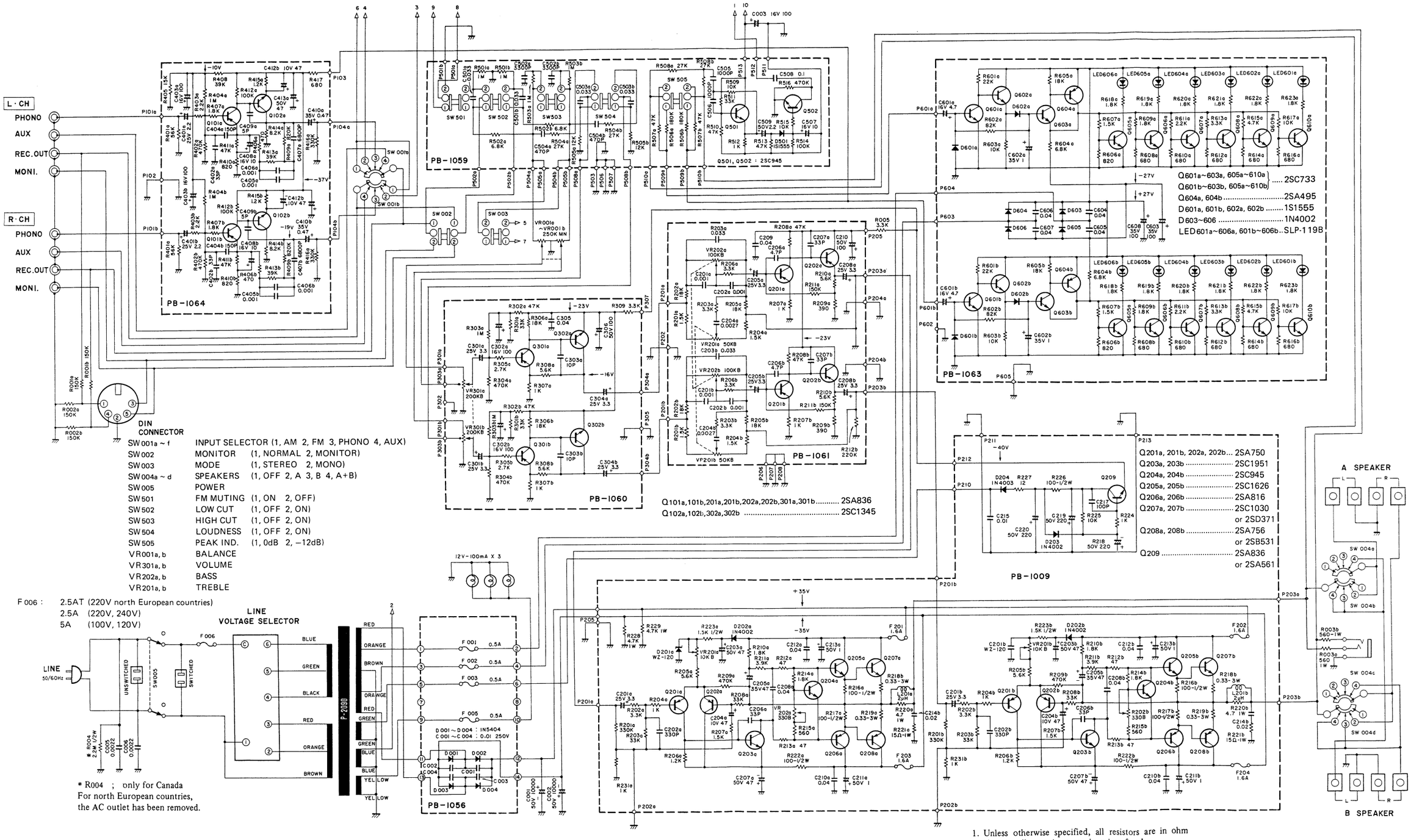
[AM SECTION]

Usable Sensitivity at 1MHz, 400Hz, 30% mod.:	15μV (EXT. ANT.)
Signal-to-noise Ratio at 1MHz 10mV, 400Hz, 30% mod.:	50dB
Image Response Ratio at 1MHz:	50dB
IF Response Ratio at 1MHz:	40dB

[GENERAL]

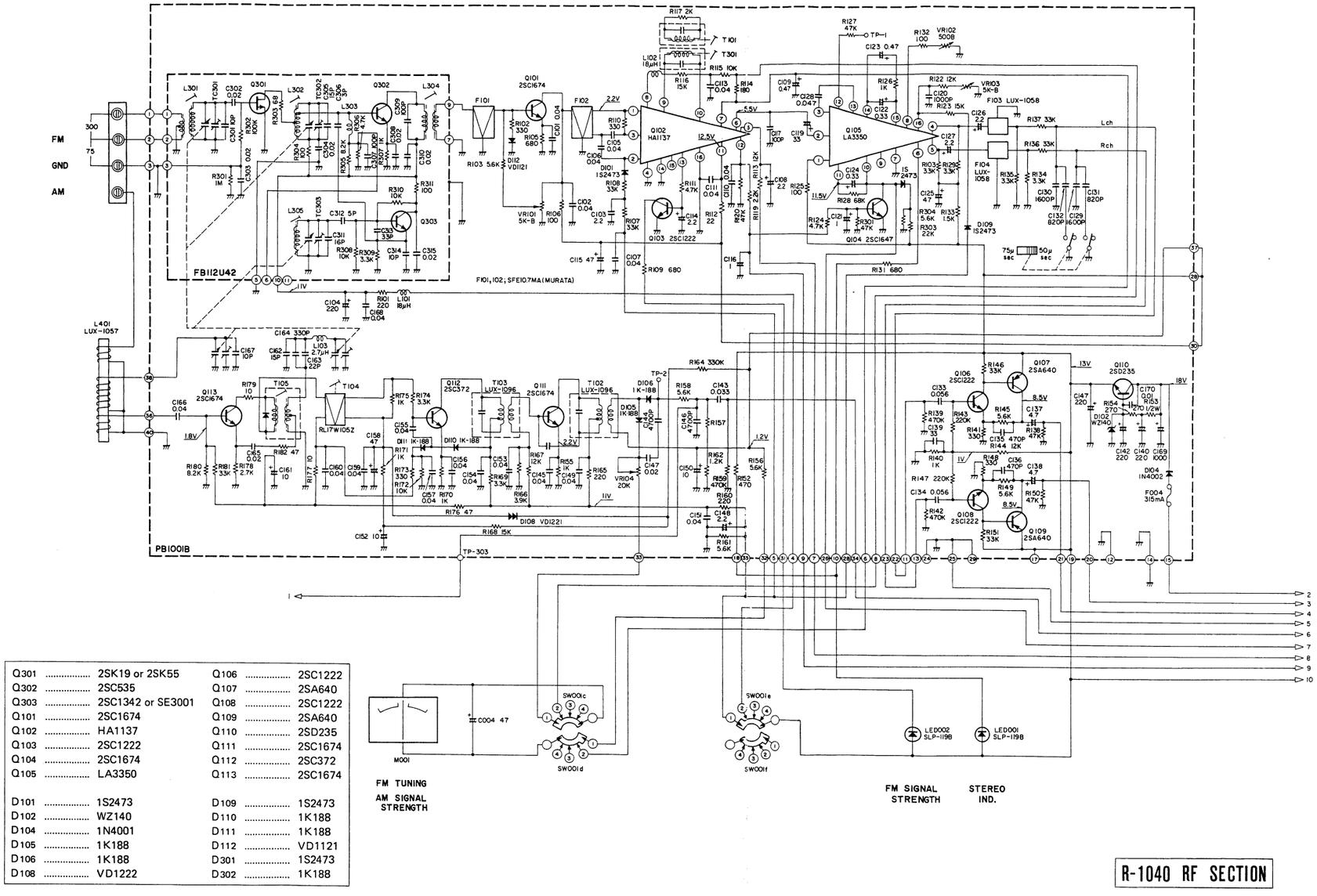
Power Consumption:	170W (at full power, 8-ohm) 120V 2.0A (CSA rated)
Dimensions:	485(W) x 353(D) x 175(H) mm (19-1/16" x 13-15/16" x 6-7/8")
Weight:	Net 12kgs (26.4 lbs.) Gross 14kgs (30.8 lbs.)

Specifications and appearance design subject to possible change without notice.



1. Unless otherwise specified, all resistors are in ohm ¼ watt, all capacitors are in micro-farad.
2. Transistors and diodes may be replaced with any types having comparable ratings.
3. Due to continued improvements LUX reserve the right to alter the circuit or specification.

R-1040 AUDIO SECTION



Q301	2SK19 or 2SK55	Q106	2SC1222
Q302	2SC535	Q107	2SA640
Q303	2SC1342 or SE3001	Q108	2SC1222
Q101	2SC1674	Q109	2SA640
Q102	HA1137	Q110	2SD235
Q103	2SC1222	Q111	2SC1674
Q104	2SC1674	Q112	2SC372
Q105	LA3350	Q113	2SC1674
D101	1S2473	D109	1S2473
D102	WZ140	D110	1K188
D104	1N4001	D111	1K188
D105	1K188	D112	VD1121
D106	1K188	D301	1S2473
D108	VD1222	D302	1K188

R-1040 RF SECTION

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